

PETROVA-ALEKSANDROVA, N.; PENEV, TS.; GUSHTEROV, G.

Some anatomic and microbiological studies on the retting of flax
(*Linum usitatissimum* L.) and hemp (*Cannabis sativa* L.).
Godishnik biol 56 no.1:67-81 '61-'62 [publ. '63].

TSENOV, Angel; PENEV, Todor; KARATVANOV, Aleksandur

Nature and causes of the winter damages to wheat and barley
in northeastern Bulgaria in 1961-1962. Selskostop nauka 2
no.10:1212-1222 '63.

PENEV, TOTIU IV.

~~TECHNOLOGY~~
TECHNOLOGY

PENEV, TOTIU IV. Reaktivni samoleti. Sofia, Nauka i izkustvo, 1957. 187, p.

Monthly List of East European Accessions (EEAI), LC., Vol. 8, No. 2
February 1959, Unclass.

GUSHTEROV, G.K.; PENEV, TS.

Studies of the flax microflora and rhizosphere. Godishnik biol
56 no.1:47-55 '61-'62 [publ. '63].

PENEV, V.

Correct attitude toward the rationalizers' suggestions.

P. 24, (Mashinizirano Zemedelie) Vol. 8, no. 7, July 1957, Sofia, Bulgaria

SO: Monthly Index of East European Accessions (EEAI) Vol. 6, No. 11 November 1957

PENEV, V.

"Utilizing worn-out pistons of the DT-54 tractor in the piston pumps of the Ursus tractor."

p. 20 (Ratsionalizatsiia) Vol. 7, no. 4, Apr. 1957
Sofia, Bulgaria

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,
April 1958

PENEV, V.

"Correct Utilization of a Diesel-Motored Tractor with a Combine" p. 11
(Mashinizirano Zemedelie, Vol. 4, No. 3/4, 1953, Sofiya)

SO: Monthly List of East European Accessions, Vol. 3, No. 3, Library of Congress,
March, 1954, Uncl.

VEKSLER, V.I.; VRANA, I.; Kladnitskaya, Ye.N.; Kuznetsov, A.A.; Mihul, A.K.;
Mihul, Ye.K.; NGUYEN DINH TU; PENEV, V.N.; SOLOV'YEV, M.I.; HOFMOKI, T.;
CHEN-LING-YEN.

On strange particle production in π p interaction. Dubna,
Izdatel'skii otdel Ob"edinennogo in-ta iadernykh issledovani, 1961.
9 p.

(No subject heading)

VAN YU-CHAN [Wang Yung-ch'ang]; VEKSLER, V.I.; DU YUAN'-TSAY
[Tu Yuan-ts'ai]; Kladnitskaya, Ye.N.; Kuznetsov, A.A.;
Mikhul, A.; NGUYEN DIN TY; PEZHEV, V.N.; SOKOLOVA, Ye.S.;
SOLOV'YEV, M.I.; SARANTSEVA, V.R., tekhn. red.

[Generation of ΛK^0 and $K^0 K^0$ pairs in $\pi^- p$ interactions at π^- -meson energies of 7-8 BeV/c.] Izuchenie rozhdeniya ΛK^0 i $K^0 K^0$ -par v $\pi^- p$ - vzaimodeistviakh pri impul'se π^- -mezona 7-8 BeV/s. Dubna, Ob"edinennyi in-t iadernykh issledovani, 1962. 15 p. (MIRA 15:6)

1. Institut Atomnoy fiziki, Bukharest. (for Mikhul).
(Mesons) (Nuclear reactions)

BELYAKOV, V.A.; VAN YUN-CHAN [Wang Yung ch'ang]; VEKSLER, V.I.;
VIRYASOV, N.N.; VRANA, I.; DU YUAN'-TSAY [Tu Yuan ts'ai];
KIM KHI IN; Kladnitskaya, Ye.N.; Kuznetsov, A.A.;
MIKHUL, E.; NGUYEN, DIN TY; PATERA, I.; PENEV, V.N.;
SOKOLOVA, Ye.S.; SOLOV'YEV, M.I.; KHOVMOKL', T.;
MIKHUL, A.

[Production of Λ -hyperons and K^0 -mesons in π^-p -
interactions at an energy of 7-8 Bev] Issledovanie protses-
sov rozhdeniya Λ -giperonov i K^0 -mezonov v π^-p - vzaimo-
deistviyakh pri energii 7-8 Bev. [n.p. n.d.] 26 p.

(MIRA 16:10)

(Mesons) (Hyperons)

BELIAKOV, V.A.; VAN YUN-CHAN [Wang Yung-chang]; VIRYASOV, N.M.;
DU YUAN'-TSAY [Du Yuan-cai]; KIM KHI IN; KLDNITSKAYA,
Ye.N.; KUZNETSOV, A.A.; NGUYEN, DIN TY [Nguyen Dinh Tu];
PENEV, V.N.; SOKOLOVA, Ye.S.; SOLOV'YEV, M.I.

[Properties of π^0 -mesons produced together with strange
particles in π^-p and π^-c -interactions] Izuchenie
svoistv π^0 -mezonov, rozhdaishchikhsia so strannymi cha-
stitsami v π^-p i π^-c vzaimodeistviakh. Dubna, Ob"-
edenennyi in-t iadernykh issledovani, 1962. 10 p.

(MIRA 16:10)

(Mesons)

ARBUZOV, B.A.; KLADNITSKAYA, Ye.N.; PENEV, V.N.; FAUSTOV, R.N.

Elastic scattering of Λ -hyperons and K_1^0 -mesons on hydrogen.
Dubna, Ob"edinennyi in-t iadernykh issledovani, 1962. 11 p.
(No subject heading)

PENEV, V.N.
BELYAKOV, V.A., WANG YUNG-CHANG, VERSLER, V.I., VIRYASOV, N.M., DU TUAN-TSAI,
KIM HI IN, Kladnitskaya, Ye. N., KUZNETSOV, A.A., MIHUL, A., NGUEN, DIN TI, PENEV, V.N.,
SOKOLOVA, Ye. B., SOLOVYEV, M. I.

"Study of ΛK and $K_1^0 K_1^0$ Pair Production in $\pi^- p$ and $\bar{\pi}^+ p$ Interactions at the
7-8 GeV/c Momentum of $\bar{K}$ Mesons"

report presented at the Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

Joint Institute for Nuclear Research
Laboratory of High Energy Physics

S/056/62/042/004/009/037
B108/B102

AUTHORS: Arbutov, B. A., Kladnitskaya, Ye. N., Penev, V. N.,
Faustov, R. N.

TITLE: Elastic scattering of Λ -hyperons and K_1^0 -mesons by hydrogen

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki,
v. 42, no. 4, 1962, 979-984

TEXT: Λ and K_1^0 particles were obtained from interactions of π^- -mesons with a momentum of 7-8 BeV/c with hydrogen and carbon in a propane bubble chamber placed in a constant magnetic field of 13,700 oe. 20 Λ -p and 16 K_1^0 -p scattering events were selected from 70,000 photographs according to energy, momentum, and co-planarity criteria. The elastic scattering cross sections of Λ -p and K_1^0 -p interaction averaged over the entire spectrum of momenta are (36 ± 14) mb and (22 ± 9) mb, respectively. The angular distribution of K_1^0 -mesons in the c.m.s. has

Card 1/2

PENEV, V. N.

S/056/52/043/003/013/053
2102/2104

AUTHORS: Wang Yung-chang, Vekselor, V. I., Tu YHun-tu'ai,
Kladnitskaya, Ye. N., Kuznetsov, A. A., Likhul, A.,
Nguyen Din Ty, Penev, V. N., Sokolova, Ye. S. Solov'yev, M. I.

TITLE: Investigation of ΛK^0 and $K^0 \bar{K}^0$ pair production in $\pi^- p$ inter-
actions with π^- meson momentum of 7-8 BeV/c

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 3(9), 1962, 815-822

TEXT: Pair production events, including 52 ($\Lambda + K^0$), 37 ($K^0 + \bar{K}^0$), 16 either
($\Lambda + K^0$) or ($K^0 + \bar{K}^0$) and two ($\Lambda + K^0 + \bar{K}^0$) were observed among 60,000 photographs
made with a 24-liter propane bubble-chamber. The momentum and angular
distributions of the π^+ , Λ and K^0 particles were determined. Also the
distribution of

$$Q = [2(E_{\Lambda(K)}E_K - P_{\Lambda(K)}P_K \cos \phi_{\Lambda(K),K}) + m_{\Lambda(K)}^2 + m_K^2]^{1/2} - m_{\Lambda(K)} - m_K \quad (1)$$

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(P - momenta)

Investigation of ΛK^0 and...

S/056/62/043/003/013/063
3102/3104

was studied and the results obtained were confronted with the theoretical curves (Monte Carlo method). Results: The mean K^0 momentum from ΛK^0 pairs was 702 ± 54 Mev/c, from $K^0 \bar{K}^0$ pairs 604 ± 55 Mev/c. In the c.m.s. in $(55 \pm 9)\%$ of the events the Λ particles from ΛK^0 pairs flow backward and those from the K^0 forward. In $(33 \pm 7)\%$ they both flow backward. In $(12 \pm 4)\%$ they both flow forward or the Λ forward and the K^0 backward (this distribution indicates a contribution of peripheral interaction). The Λ -hyperon distribution has a peak at $-1 < \cos \theta_{\Lambda} < -0.8$. For the $K^0 \bar{K}^0$ pairs a maximum in the K^0 distribution was observed at $+0.6 < \cos \theta_{K^0} < +1$. In $(47 \pm 12)\%$ of the cases the both K^0 mesons flow in opposite directions, in $(25 \pm 7)\%$ both flew backward and in $(28 \pm 8)\%$ both forward. From the angular distribution it can be concluded that in $K^0 \bar{K}^0$ pair production besides the S-wave states with higher l will exist. The Q-distribution for these pairs has a maximum in the range 50-150 Mev/c. There are 14 figures.

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Investigation of AK⁰ and...

S/056/62/043/003/013/063
B102/B104

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint
Institute of Nuclear Research). Institute of Atomic
Physics, Bucharest (A. Mikhul)

SUBMITTED: April 11, 1962

Card 3/3

L 10228-63

FCS(?) / EMT(m) / ENS - APTC / ASD

ACCESSION NR: AP3000037

S/0056/63/044/005/1474/1480

AUTHOR: Belyakov, V. A.; Wang Yung-ch'ang; Viryasov, N. M.; Tu Yuan-ts'ai; Kim Khi In; Kladnitskaya, Ye. N.; Kuznetsov, A. A.; Nguyen Din Ty; Penev, V. N.; Sokolova, Ye. S.; Solov'yev, M. I. 69 61

TITLE: A study of the properties of neutral pions¹⁹ produced with strange particles in negative pion proton and negative pion carbon interactions.

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 44, no. 5, 1963, 1474-1480

TOPIC TAGS: Neutral pions, strange particle interactions

ABSTRACT: An earlier investigation on the production of strange particles by 7-8 Bev negative pions on hydrogen and carbon was continued with a 24 - liter propane bubble chamber. The properties of the neutral pions inferred from the photons accompanying the LAMBDA hyperon and neutral kaon production are given and are compared with the properties of the pions (positive and negative) emitted in LAMBDA and neutral-kaon production processes. In calculating the total number of photons, corrections were introduced for the loss of photons

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L 10238-63

ACCESSION NR: AP3000037

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emitted at large azimuthal angles and for the asymmetry of the incident beam relative to the longitudinal axis of the chamber. The possibility of a resonance with radiative decay is noted. "In conclusion, the authors wish to thank Academician V. I. Veksler, Professor Chang Weng-yu, M. I. Podgoretskiy, A. M. Baldin, A. V. Nikitin, V. B. Lyubimov and Yen Wu-kuang for useful discussions and many valuable remarks, the staff of the computation center for the calculations, and the laboratory assistants for the measurements. Orig. art. has: 4 figures, 9 formulas, and 4 tables.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: 07Dec62 DATE ACQ: 12Jun63

ENCL: 00

SUB CODE: PH

NR REF SOV: 008

OTHER: 004

elm/or
Card 2/2

BELYAKOV, V.A.; BOYADZHIYEV, A.V.; VAN YUN-CHAN[Wang Yung-ch'ang];
VEKSLER, V.I.; VIRYASOV, N.M.; KIM KHI IN; Kladnitskaya,
Ye.N.; Kuznetsov, A.A.; MAL'TSEV, V.M.; NGUYEN, DIN TY;
PENEV, V.N.; SOLOV'YEV, M.I.; ZRELOVA, N.N., tekhn. red.

[Production of $\Lambda(\Sigma^0)$ -hyperons and K^0 -mesons in the inter-
action of 7 GeV. π^- -mesons with carbon] Rozhdenie $\Lambda(\Sigma^0)$ -
giperonov i K^0 -mezonov pri vzaimodeistvii π^- -mezonov s
energiei 7 GeV s uglerodom. Dubna, Ob"edinennyi in-t iader-
nykh issledovani, 1963. 18 p. (MIRA 17:2)

PENEV, V. N.

8/056/63/044/002/007/065
B102/B186

8

AUTHORS:

Belyakov, V. A., Wang Yung Ch'ang, Veksel, V. I.,
Viryasov, N. M., Vrana, I., Tu Yüan-ts'ai, Kim Khi Ying,
Kladnitskaya, Ye. N., Kuznetsov, A. A., Mikhul, E. Nguyen
Din Ty, Patera, I., Penev, V. N., Sokolova, Ye. S.,
Solov'yev, M. I., Khofmakl', T., Cheng Ling-yen, Mikhul, A.

TITLE:

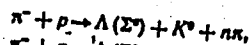
Investigation of Λ -hyperon and K^0 -meson production
processes in πp interactions at 7-8 Bev

PERIODICAL:

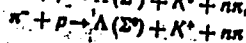
Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
no. 2, 1963, 431-443

TEXT: The o.m.s. momentum and angular distributions determined for the
 Λ and K^0 particles produced in πp interactions are given and discussed.
The measurements were made using a 24-liter propane bubble chamber in a
field of 13,700 oe. The total momentum spectrum of the Λ -hyperons
produced in the reactions

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(1)



(2)

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Investigation of Λ -hyperon ...

S/056/63/044/002/007/065
B102/B186

are shown in Fig. 1, compared with theoretical results. As it may be seen the statistical theory describes the experimental curve very well if the isobars and the cases with $p_p - p = \Delta < 700$ Mev are neglected.

$\Delta < 700$ Mev corresponds to $\sim 30\%$ of all Λ , these being produced in peripheral interactions. The Λ angular distribution has a distinct backward peak ($n_{\Lambda}/n_{\Lambda} = 0.18 \pm 0.02$). With increasing multiplicity n , the agreement between experiment and statistical theory improves. The Λ angular distribution and the distribution with respect to $p_{\perp}$ is virtually independent of n . The overall mean of the transverse momentum is 383 ± 12 Mev/c; for $\Delta < 700$ Mev, $\bar{p}_{\Lambda_{\perp}} = 295 \pm 14$ Mev/c and for $\Delta > 700$ Mev, $\bar{p}_{\Lambda_{\perp}} = 432 \pm 18$ Mev/c. For the $K^0(\bar{K}^0)$ mesons produced in the reactions

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Investigation of Λ -hyperon ...

S/056/63/044/002/007/065
B102/B186

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$$\pi + p \rightarrow \begin{cases} K^0 + \Lambda(\Sigma^0) + n\pi, & (1) \\ K^0 + \bar{K}^0 + N + n\pi, & (3) \\ K^0 + K^+ + N + n\pi, & (4) \\ \bar{K}^0 + K^+ + N + n\pi, & (5) \\ K^0 + \Sigma^+ + n\pi, & (6) \end{cases}$$

the total momentum spectrum measured (Fig. 4) is weaker than that calculated according to the statistical theory. The angular distribution (Fig. 5) has, besides the isotropic part, a forward peak ($\bar{n}_{K^0}/\bar{n}_{K^+} = 1.61 \pm 0.15$). The

forward-backward ratio decreases with increasing n_π . For the charged pions arising in Λ -production events the momentum distributions are, for $p_\pi^* > 400$ Mev/c, well described by the statistical theory without taking the isobars into account, for $p_\pi^* < 400$ Mev/c it is higher than that obtained from theory. The angular distributions for $n_\pi = 2, 4, 6$ are characterized by

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Investigation of Λ -hyperon....

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B102/B186

$$\bar{n}_{\pi^+}/\bar{n}_{\pi^-} = 1.10 \pm 0.12, \quad \bar{n}_{\pi^-}/\bar{n}_{\pi^+} = 1.40 \pm 0.13.$$

The mean number of π^0 mesons produced per π^-p interaction with Λ production is 1.23 ± 0.14 . The angular distribution of π^- arising in stars with K^0 production has a flat forward maximum ($\bar{n}_{\pi^-}/\bar{n}_{\pi^+} = 1.10 \pm 0.10$). The mean number of charged particles produced together with Λ is $n_c = 2.22 \pm 0.13$ which agrees closely with the statistical theory without the isobars. The main part of Λ and K^0 is produced in two-pronged stars. The admixture of $K^0 \Sigma^\pm$ pairs amounts to less than 20% of the number of $K^0 K^- + K^0 K^+$ pairs. The momentum distribution of charged pions from π^-p interactions with Λ -hyperon production are characterized by $P_{\pi^+}^* = 425 \pm 16$ Mev/c and $P_{\pi^-}^* = 444 \pm 15$ Mev/c. From a comparison of these angular distributions it is concluded that processes involving ΛK or $K\bar{K}$ pair production are more central than the usual processes of multiple pion production. If one divides the π^-p interactions with strange particle production into head-on

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Investigation of Λ -hyperon ...

8/036/63/044/002/007/063
B102/B106

and peripheral collisions one can say that those involving $K\bar{K}$ pair production are rather of the head-on type than those with ΛK pair production. There are 15 figures and 2 tables.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: July 31, 1962

Fig. 1. Total momentum spectrum of hyperons; dashed line: without correction for recording probability; shaded area: events with $\Delta < 700$ Mev, curves obtained from statistical theory with (I) and without (II) isobars, and without the events with $\Delta < 700$ Mev (II').

Fig. 4. K^0 total momentum spectrum.

Fig. 5. K^0 total angular distribution.

Card 5/7

ARBUZOV, B.A.; KLADNITSKAYA, Ye.N.; PENEV, V.N.; FAUSTOV, R.N.

Elastic scattering of Λ -hyperons and K^0 -mesons on hydrogen.
Zhur.eksp.i teor.fiz. 42 no.4:979-984 Ap '62. (MIRA 15:11)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Hyperons--Scattering) (Mesons--Scattering) (Hydrogen)

BELYKOV, V.A.; VAN YUN-CHAN [Wang Yung-ch'ang]; VEKSLER, V.I.; VIRYASOV, N.M.;
DU YUAN'-TSAY [Tu Yuan-ts'ai]; KIM KHI IN; KLDNITSKAYA, Ye.N.;
KUZNETSOV, A.A.; NGUYEN DIN TY; PENEV, V.N.; SOLOV'YEV, M.I.

Polarization of $\sqrt{s}$ -hyperons produced in π^+C -interactions at 7 Bev.
Zhur. eksp. i teor. fiz. 45 no.2:90-92 Ag '63. (MIRA 16:9)

1. Ob'yedinennyi institut yadernykh issledovaniy.
(Nuclear reactions) (Hyperons)

BELYAKOV, V.A.; BOYADZHIYEV, A.V.; VAN YUN-CHAN; VEKSLER, V.I.; VIRYASOV,
N.M.; KHIM KHI IN; KLDNITSKAYA, Ye.N.; KUZNETSOV, A.A.;
MAL'TSEV, V.M.; NGUYEN DIN TY; PENEV, V.H.; SOLOV'YEV, M.I.

Production of Λ (Σ^0)-hyperons and K^0 -mesons in interactions
between 7 Gev. π -mesons and carbon. Zhur. eksp. i teor. fiz.
46 no.5:1586-1597 My '64. (MIRA 17:6)

1. Ob'yedinenny institut yadernykh issledovaniy.

ACCESSION NR: AP4042554

S/0056/64/046/006/1967/1978

AUTHORS: Balyakov, V. A.; Veksler, V. I.; Viryasov, N. M.; Kladnit-skaya, Ye. N.; Kopy*lov, G. I.; Penev, V. N.; Sokolova, Ye. S.; Solov'yev, M. I.

TITLE: Pion resonances produced simultaneously with strange particles in negative pion proton interactions at 7.5 GeV/c

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 6, 1964, 1967-1978

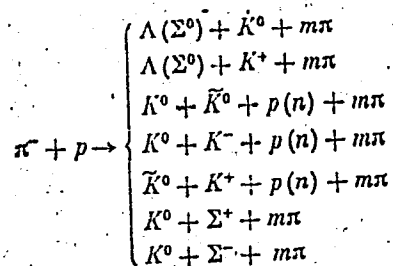
TOPIC TAGS: pion, negative pi meson, strange particle, resonance scattering, omega meson, proton reaction

ABSTRACT: Continuing a series of earlier research on the generation of strange particles and pions in a beam of 7.5 GeV/c negative pions (ZhETF v. 43, 815, 1962; v. 44, 431 and 1474, 1963; Proc. 1960 Rochester Conf., 1961, p. 388), the authors investigated with the aid of 24-liter propane bubble chamber the pion resonances produced simul-

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ACCESSION NR: AP4042554

taneously with strange particles. Pion resonances produced in interactions of the type



were investigated (m -- number of pions). Simultaneous production of ρ^0 mesons and ΛK pairs was observed in events characterized by a charged particle multiplicity $n_s = 4$ and having cross sections of 20 ± 8 microbarns. Cross sections for the production of ω and η resonances are presented. It is concluded that the four-pion effective

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ACCESSION NR: AP4042554

mass distribution has a peak at 1340 MeV and several possible reasons for this peak are suggested. "We are greatly indebted to M. I. Podgoretskii and I. V. Chuvilo for assistance and valuable discussion, to Tu Yuan-ts'ao, A. A. Kuznetsov, Kim Hi In, Nguyen Dinh Tu, and Wang Yung-ch'ang for participating in the first stage of the work, to N. N. Govorun and N. F. Markova of the computing center of OIYaI and to G. M. Korotkova, S. N. Komarova and L. M. Zhukova for measurements and calculations." Orig. art. has: 11 figures, 11 formulas, and 1 table.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Institute of Nuclear Research).

SUBMITTED: 30Dec63

DATE ACQ:

ENCL: 00

SUB CODE: NP

NR REF SOV: 009

OTHER: 012

Cord 3/3

BELIAKOV, V.A.; VEKSLER, V.I.; VIRYASOV, N.M.; KLADNITSKAYA, Ye.N.;
KOPYLOV, G.I.; MIKHUL, A. [Michul, A.]; PENEV, V.N.; SOKOLOVA,
Ye.S.; SOLOV'YEV, M.I.

η -Meson resonances generated simultaneously with strange
particles in η -p-interactions at 7.5 GeV/c. Zhur. eksp. i teor.
fiz. 46 no.6:1967-1978 Je '64.

1. Ob"yedinennyy institut yadernykh issledovaniy. 2. So-
trudnik Instituta atomnoy fiziki Rumynskoy Akademii nauk,
Bukharest (for Mikhul). (MIRA 17:10)

L 23730-66 EWT(m)/T

ACC NR: AP6014814

SOURCE CODE: UR/0367/65/001/002/0330/0350

AUTHOR: Belyakov, V. A.; Veksler, V. I.; Viryasov, N. M.; Kladnitskaya, Ye. N.---
Kladnitskaya, E. N.; Kopylov, G. I.; Penev, V. N.; Solov'yev, M. I.---Solovyev, M. I.

ORG: Joint Institute of Nuclear Research (Ob'yedinennyy institut'yadernykh issledovaniy)

TITLE: Baryon resonances in π -p-interactions at 7.5 GEV with formation of strange particles 19

SOURCE: Yadernaya fizika, v. 1, no. 2, 1965, 338-350 B

TOPIC TAGS: baryon, meson, particle interaction, strange particle, hyperon, particle cross section

ABSTRACT: The formation and properties of resonances decaying into Λ -hyperons and π -mesons were studied. Data are given on the formation cross sections for Y^+ (1385) and Y^+ (1660)-hyperons in π -p-interactions at 7.5 GEV/c. The properties and formation characteristics of Y^+ (1385)-hyperons and their decay products were investigated. The maximum in the mass spectrum $M_{\Lambda\pi^+\pi^-}$ at the value 1770 MEV was discussed. The authors thank Professor M. I. Podgoretskiy and Professor I. V. Chuvilo for their interest in the work and their discussions; A. Mikhul, Nugen Din Ty, A. A. Kuznetsov, Ye. S. Sokolova, Du Yuan'-tsay, Van Yun-ohan and Kim Khi In for taking part in the first stage of the work. Further thanks is rendered N. F. Markov and V. Ye. Komolov, co-workers at the Computer Center, for carrying out the calculations and the group

Cont 1/2

L 23730-66

ACC NR: AP6014814

of laboratory workers for the measurements. The authors also thank V. G. Grishin, A. V. Nikitin, E. G. Bubelev, and I. Kurelar for discussing the various problems of this work. Orig. art. has: 9 figures, 2 formulas, and 4 tables. [Based on authors' Eng. abet.] [JPRS]

SUB CODE: 20 / SUBM DATE: 01Sep64 / ORIG REF: 011 / OTH REF: 009

Card 2/2 *lll*

L 23731-66 EWT(m)/T

SOURCE CODE: UR/0367/65/001/002/0351/0365

ACC NR: AP6014815

AUTHOR: Belyakov, V. A.; Veksler, V. I.; Viryasov, N. M.; Kladnitskaya, Ye. N.;
Kladnitskaya, E. N.; Kopylov, G. I.; Penev, V. N.; Solov'yev, M. I.; Solovyev, M. I.

ORG: Joint Institute of Nuclear Research (Ob'yedinenyy institut yadernykh issledovaniy)

TITLE: Meson resonances in π -p-interactions at 7.5 GEV with formation of strange particles

SOURCE: Yadernaya fizika, v. 1, no. 2, 1965, 351-365

TOPIC TAGS: π meson, strange particle, particle interaction, K meson, mass spectrum

ABSTRACT: Resonances decaying into K^0 ($\bar{K}^0$, K^+) and π -mesons are investigated. Cross sections are given for the formation of K^* (888) and k (730) mesons in π -p-interactions at 7.5 GEV/c in events with KK pairs, and the contribution (in %) of k^0 , K^{*0} -mesons in events with Λ K^+ pairs is evaluated. Properties and formation characteristics of K^{*0} -mesons are described. Mass-spectra of the $K_2 \pi$ and $K_3 \pi$ systems are investigated. The possibility of the formation of a new resonance $U = K^0 + \pi^+ + \pi^- + \pi^0$ with mass 1660 MEV is indicated. An attempt is made to determine its quantum numbers. Proofs are given for the production of a resonance with mass 1050 MEV, decaying into three π -mesons ($\pi^+ \pi^- \pi^0$), which can be identified as the A_1 -meson.

Cord 1/2

23731-66

ACC NR: AP6014815

The authors thank Professor M. I. Podgoretskiy and Professor I. V. Chuvilo for their interest in the work and for the discussions; A. Mikhul, Ngen Din Ty, A. A. Kuznetsov, Ye. S. Sokolova, Du Yuan'-tsay, Van Yun-chan and Kim Khi In for taking part in the first stage of the work. Further thanks is rendered to the co-workers at the Computer Center, N. F. Markov and V. Ye. Komolov, for carrying-out the calculations and the group of laboratory workers for the measurements. The authors also thank A. V. Nikitin, V. G. Grishin, E. G. Bubelev, and I. Kurelar for discussing the various problems of this work. Orig. art. has: 13 figures and 3 tables. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 01Sep64 / ORIG REF: 008 / OTH REF: 013

Card 2/2 *See*

BELYAKOV, V.A.; VAN YUN-CHAN [Wang Yung-ch'ang]; VEKSLER, V.I.; VIRYASOV, N.M.; VRANA, I.; DU YUAN'-TSAY [Tu Yuan-ts'ai]; KIM KHI IN; KLODNI'ISKAYA, Ye.N.; KUZNETSOV, A.A.; MIKHUL, E.; NGUYEN DIN TY; PATERA, I.; PENEV, V.N.; SOKOLOVA, Ye.S.; SOLOV'YEV, M.I.; KHOFMOKL', T.; CHEN LIN-YAN'; MIKHUL, A. [Mihul, A.]

Study of Λ -hyperon and K^0 -meson production in $\pi\pi$ -p-interactions at an energy of 7 - 8 Billion Electron Volts. Zhur. eksp. i teor. fiz. 44 no.2:431-443 F '63. (MIRA 16:7)

1. Ob'yedinennyy institut yadernykh issledovaniy. 2. Sotrudnik Instituta atomnoy fiziki v Bukhareste (for Mikhul).

PENEV, YORD.

Fighting for a High Percentage of Lump Coal Output through Proper
Shotfiring. Minno Delo (Mining), #3:40:Mar 55

Z. PENEV

"Treating with novocain an acute inflammation originating in the dental area in its initial phase of development. p. 157. (STOMATOLOGIJA, No. 3, 1952, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, Vol. 2 No. 7, July 1953, Uncl.

DAVIDOV, Sl.; PENEV, Zl.

About the traumatic injuries of the teeth and the paridental tissues. Nauch. tr. vissh. med. inst. Sofia 43 no.2:61-66 '64

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PENEV, Zl.

DAVIDOV, Sl., prof.; KAVRAKIROV, V., dots.; PENEV, Zl.; ANGELOV, D.;
DEVETAKOV, M.; BORIMECHKOV, L.

Traumatic injuries of the jaw region in Bulgaria. Stomatologia,
Sofia no.3:174-183 1954.

1. Iz Katedrata po khirurgichna stomatologia pri Meditsinskata
akademiia V.Chervenkov, Sofiia. Zav. katedrata: prof. Sl.Davidov.

(JAWS, wounds and injuries,
statist., Bulgaria)

(WOUNDS AND INJURIES,
jaws, statist., Bulgaria)

PENEV, Zl.D., asistent

~~Stomatologiya~~ Clinico-laboratory investigations on local novocain block in the treatment of acute inflammatory processes of dental origin. Stomatologiya, Sofia no.5:287-301 1954.

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(PROCAINE, therapeutic use,

inflamm. of dent. origin, nerve block)

(ANESTHESIA, REGIONAL, IN various diseases,

procaine block in inflamm. of dent. origin)

(INFLAMMATION, therapy,

procaine nerve block in inflamm. of dent. origin)

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Preservation of the operated area in restorative plastic surgery of the palate. Stomatologija, Sofia no.6:366-372 1953.

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(PALATE, surgery,
plastic, conservative technic)

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Errors in local anesthesia in dental practice and their sequelae.
Stomatologiya, Sofia no.5:310-317 1953.

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akademiya Vulko Chervenkov - Sofia. Vr.zavezhd.katedrata;
dots. G.Popov.

(ANESTHESIA, LOCAL,
in dent., errors)

(DENTISTRY, OPERATIVE, anesthesia and analgesia,
local, errors)

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1. Scientific Research Institute of the Rubber and Plastic
Industries, Sofia.

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Epidemic of benign serous meningitis and similar disease.
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(MENINGITIS, epidemiology,
serous, epidemic outbreak in Bulgaria.(Bul))

IONKOV, I.; TSOLOV, R.; STANCHEV, A.; DOSKOV, I.; SHISHMANOVA, IU.;
BALCHEV, A.; PENEVA, M.; SUKIASIAN, Kh.; MATEV, M.; NIKOLOV, St.;
ATANASOV, E.; TODOROV, B.; STEFANOVA, A.

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exudative pleurisy. Nauch. tr. Med. akad. Chervenkov, Sofia 1 no.1:
117-137 1953.

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propedevtika na vutreshnite bolesti.

(TUBERCULOSIS, PULMONARY, complications,
pleurisy, exudative)

PENEVA, M.

Some gastric functional changes in patients with pulmonary and pleural diseases. Nauch.tr. vissh. med. inst. Sofia 42 no.6:83-90 '63

1. Predstavena ot prof. Iv.Ionkov, rukovoditel na Katedrata po propedevtika na vutreshnite bolesti.

*

PEINEKOVA, Khr.; PENEVA, M.

Treatment of chronic alcoholism with apomorphine and sodium hyposulfite.
Suvrem med., Sofia no.7-8:111-115 '60.

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L.Krustev)

(ALCOHOLISM ther)
(APOMORPHINE ther)
(SULFITES ther)

TSOLOV, R.; MATEV, M.; PENEVA, M.

Result of investigation of gastric and duodenal ulcer in Bulgaria. Suvrem. med., Sofia 8 no.6:70-71 1957.

1. Iz Propedevtichnata vutreshna klinika pri VMI; Sofia (Direktor: prof. I. Ionkov).
(PEPTIC ULCER, statistics,
in Bulgaria (Bul))

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Certain data on cholelithiasis in Bulgaria. Suvrem. med., Sofia
8 no.6:71-72 1957.

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(CHOLELITHIASIS, statistics,
in Bulgaria (Bul))

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Certain data on cholecystitis in Bulgaria. Suvrem. med., Sofia 8 no.6:
72-73 1957.

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(CHOLECYSTITIS, statistics,
in Bulgaria (Bul))

PENEVA, M.

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(UROPEPSIN) (SPONDYLITIS, ANKYLOSING)
(SPINAL DISEASES)

PENEVA, M.

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Gastric secretion in tuberculous exudative pleurisy. *Sovrem. med.*,
Sofia 5 no.1:5-20 1954.

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"V. Chervenakov", Sofia (direktor: prof. Iv. Ionkov)

(GASTRIC JUICE,

"secretion, in tuberc. exudative pleurisy)

(TUBERCULOSIS, PULMONARY, physiology,

"gastric juice secretion in tuberc. exudative pleurisy)

PENEZEV, Vladimir Nikolayevich; SHOBIX, L.Ye., inzh., ved. red.;
SHREYDER, A.V., kand. tekhn. nauk, red.; SOROKINA, T.M.,
tekhn. red.

[Equipment for the spray pickling of parts prior to electro-
plating] Ustanovka dlia struinogo travleniia detalei pered
naneseniem pokrytii. Moskva, Filial Vses. in-ta nauchn. i
tekhn. informatsii, 1958. 17 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 13. No.M-58-226/23)
(Metals--Pickling) (MIRA 16:3)

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Anatomy of the spinal cord. Biol i khim 7 no. 3:39-41 '64.

PROKHOROVA, M.I.; PENEVA, T.I.; ROMANOVA, L.S.; TUMANOVA, S.Yu.

Cerebral gangliosides. Ukr. biokhim. zhur. 37 no. 5: 778-786 '65.
(MIRA 18:10)

1. Fiziologicheskii institut leningradskogo gosudarstvennogo
universiteta.

L 25755-66

ACC NR: AP6016387

SOURCE CODE: UR/0300/65/037/005/0778/0786

AUTHOR: Prokhorova, M. I.; Peneva, T. I.; Romanova, L. S.; Tumanova, S. Yu. 29

ORG: Physiological Institute, Leningrad State University (Fiziologicheskiy institut Leningradskogo gosudarstvennogo universiteta) 8

TITLE: Gangliosides of the brain 12

SOURCE: Ukrayins'kyy biokhimichnyy zhurnal, v. 37, no. 5, 1965, 778-786

TOPIC TAGS: rat, brain, chromatography, biochemistry

ABSTRACT: Determination of the gangliosides in the rat brain by the thio-barbiturate method at 10-12 days, 3-4 weeks, one and a half, and 3 months of age indicated that the accumulation of gangliosides in the rat brain is completed at 3-4 weeks of age. The ganglioside content in the brains of adult animals is an average of 0.15%, calculated on the basis of crude weight of the tissue. The brain gangliosides were separated by thin-layer chromatography into eight fractions, with Rf values: 0.05, 0.14, 0.25, 0.33, 0.43, 0.52, 0.67, and 0.71. Disialogangliosides comprise 68% of the brain gangliosides, trisialogangliosides, about 20%, and monosialogangliosides, about 12% of the total. Orig. art. has: 3 figures and 3 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 30May65 / ORIG REF: 007 / OTH REF: 041

Cord 1/1 CC

PEREZHEKO, G.I. geroy Sovetskogo Soyuz; POZDNYSHIN, A.V., red.; MUNTIAN,
T.P., tekhn. red.

[Soviet tank troops in battles for the homeland] Sovetskie tankisty
v boiakh za rodinu. Moskva, Izd-vo DOSAAF, 1955. 62 p. (MIRA 11:7)
(Tanks warfare) (World War 1939-1945—Campaigns)

PENEMIC, J.

Popular-scientific films in the education of sildiers' some experiences. p. 53.
(GLASNIK, Vol. 11, No. 3, Mar. 1957)

SO: Monthly List of East European Accessions (EEAL) LC Vol. 6, No. 12, Dec. 1957
Uncl.

DEVEGRESKI, Miloje; MILANKOVIC, Petar; DJUROVIC, Marija; PENEZIC, Svetlana

Clinical value of the determination of iodine blood albumin bound iodine.
Srpski arh. celok. lek. 85 no.12:1337-1347 12 Dec 57

1. Interna klinika B Medicinskog fakulteta u Beogradu Upravnik: prof.
Radivoje Berovic. Odeljenje za eksp. i klinicku patologiju Srpske aka-
demije nauka u Beogradu. Upravnik: prof. Vojislav Arnovljjevic.

(THYROID GLAND, dis.

diag. value of determ. of serum globulin bound iodine)

(IODINE, in blood

globulin-bound, determ., diag. value in thyroid gland dis.)

(SERUM GLOBULIN

iodine, determ. in diag. of thyroid gland dis.)

PALLADIN, O.V.; RASHBA, Ye.Ya. [reviewers]; PENFIELD, W.; RASMUSSEN, Th. [authors].

"Cerebral cortex of man. A clinical study of localization of function."
W. Penfield, Th. Rasmussen. Reviewed by O.V. Palladin, IZ, IA. Rashba. Ukr.
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(MLRA 6:11)
(Brain)

PENFIL'D, U.

Psychic manifestation induced by electrical irritation of the
cerebral cortex. Zhur.vys.nerv.deiat. 6 no.4:532-549 J1-Ag '56.
(MLRA 9:11)

1. Neurologicheskiy institut (Montreal!, Kanada)
(CEREBRAL CORTEX, physiology,
eff. of electrical stimulation on psychical funct. (Rus))

PENFIELD, W.
PENFIELD, Wilder

Some observations on the functional organization of the human brain.
Ideg. szemle 10 no.5-6:138-141 Oct-Dec 57.

1. Director, Montreal Neurological Institute. Chairman of Department of Neurology and Neurosurgery, McGill University.
(BRAIN, physiol.
funct. organiz.)

PENFIL'D, Vil'der.

Results of treating focal epilepsy with resection of the
cerebral cortex. Vopr. neirokhir. 20 no.1:3-7 Ja-F '56 (MLRA 9:6)

1. Direktor Nevrologicheskogo instituta v Monreale (Kanada)

(EPILEPSY

focal, surg., resection of cerebral cortex)

(CEREBRAL CORTEX, surg.

resection, in focal epilepsy)

FENGEROTS, V.

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DLC: DK511, L17B5

So: IC, Soviet Geography, Part II, 1951/Unclassified

"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001239920008-7

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001239920008-7"

ANDREYEV, Grigoriy Yakovlevich; SHERZHUKOV, Geliy Yefimovich;
SHEVCHENKO, Valentin Yakovlevich; LEV, Arkadiy L'vovich;
SPAVKIN, I.P., ved. red.; KUZNETSOV, P.G., ved. red.;
PENGLER, K.I., red.

[Manufacturing and using glass-reinforced plastic pipes; a
survey of foreign technology] Proizvodstvo i primeneniye stek-
loplastikovykh trub; obzor zarubezhnoi tekhniki. Moskva,
GOSINTI, 1962. 89 p. (Tema 10) (MIRA 17:4)

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equipment. Les., bum. i der. prom. no.1:9-13 '65.

(MIRA 18:12)

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HECKO, I.; HORECNY, K.; PENIAZKA, J.

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1. Of the Children's Clinic and of Pathologico-Anatomical Institute
of Slovak University in Bratislava.

J. PENIAZKA

Our experience with blood transfusions in foetal erythroblastosis.
Pediat. listy, 5:2, Mar.-Apr. 50, p. 82-86

1. Of the Children's Clinic of Slovak University in Bratislava
(Head--Docent Ivan Hecko, M. D.).

GINL 19, 5, Nov., 1950

PENICKA, Z.

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Reviewed by Z. Penicka. Stavivo 41 no.3:115-116 Mr '63.

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Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,
April 1958

PENICKA, Z.; HRUBY, J.

Formula and instructions for the calculation of rotor starting resistances. (2d supplement) p. T9.
(Elektrotechnický Obzor, Vol. 46, no. 2, February 1957. Praha, Czechoslovakia)

SO: Monthly List of East European Accessions. (EEAL) LC. Vol. 6, No. 6,
June 1957. Uncl.

PENICKA, Z.; HRUBY, J.

Calculation of the rotor starting rheostats for hoisting equipment with asyn-
chronous motors. p. 516.

Vol. 44, no. 10, Oct. 1955
ELEKTROTECHNICKY OBZOR
Praha, Czechoslovakia

Source: East European Accession List. Library of Congress
Vol. 5, No. 8, August 1956

CZECHOSLOVAKIA/Pharmacology, Toxicology - Toxicology.

U-9

Ab's Jour : Ref Zhur - Biol., No 3, 1958, 13104

Author : Holecek, V., Penickova, M.

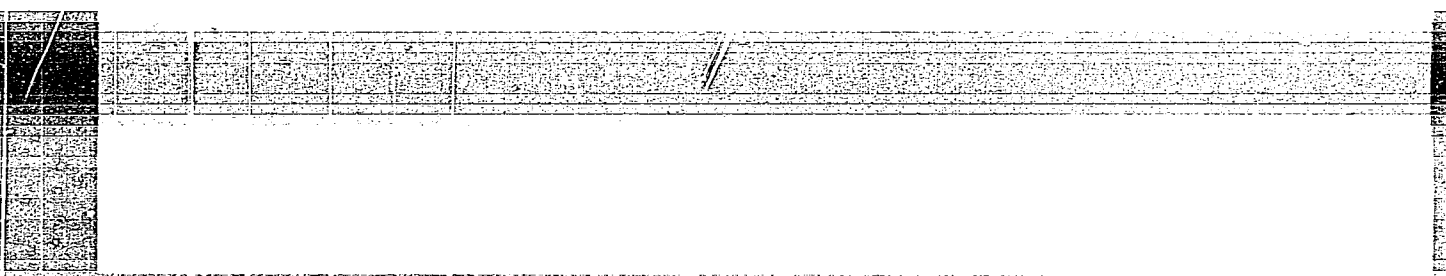
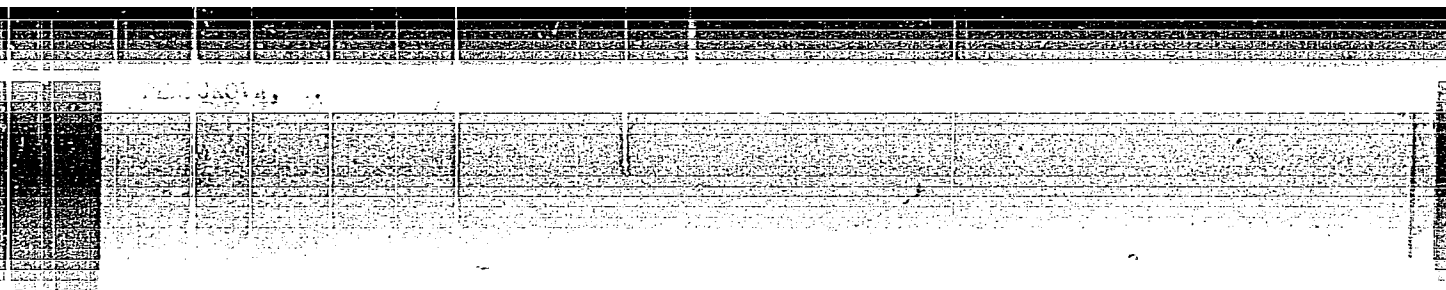
Inst : -
Title : Coproporphyrin Excretion in the Urine in Lead Poisoning.
II. The Level of Coproporphyrin I and III Isomers in
Urine.

Orig Pub : Pracovni lekar., 1956, 8, No 6, 415-419.

Abstract : A study was made of the coproporphyrin precursor level in
the urine of healthy subjects and of those suffering from
lead poisoning. Methyl ethers of porphyrin were extracted
from the urine by various methods. Coproporphyrin was se-
parated by column chromatography and its isomers, I and II,
by paper chromatography. It was found that in lead poiso-
ning the urine contained predominantly a precursor of co-
porphyrin III and only a small amount of coproporphyrin
I precursor. Coproporphyrins I and III were found in

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HOLECEK, Vaclav; PENICKOVA, M.

Urinary secretion of coproporphyrins in lead poisoning. II.
Distribution of coproporphyrin isomers I and III in urine.
Pracovni lek. 8 no.6:415-419 Dec 56.

1.-Ustav Hygieny prace a chorob z povolani, Praha, reditel prof.
Dr. J. Teisinger.

(PORPHYRINS, in urine,
coproporphyrin isomers I & III in lead pois. (Cz))
(LEAD POISONING, urine in,
coproporphyrin isomers I & III (Cz))

HOLECEK, Vaclav; SKRAMOVSKY, Stanislav; za technicke spoluprace
M. Penickove.

Determination of methemoglobin in the blood. Pracovni lek. 8
no.2:128-132 May 56.

1. Z Ustavu hygieny prace a chorob z povolani, prednosta prof.
Dr. J. Teisinger.

(HEMOGLOBIN,
methoglobin, determ. (Cz))

PENIEGUIN, I. I.

M. A. BLINSON, Katshestvennaia Stal, 1937, n. 1, pp. 7-14

I 10951-65 FBO/EWT(1)/EEC(k)-2/T/EWP(k)/EWA(m)-2/EWA(h) SCTB/IJP(c) WG/GG
 ACC NR: AP6002286 SOURCE CODE: UR/0188/65/000/006/0043/0048
 44,55 44,55 44,55 44,55
 AUTHOR: Klyshko, D. N.; Penin, A. N.; Polkovnikov, B. P.; Tumanov, V. S.
 44,55
 ORG: Moscow University, Department of Radio Engineering (Moskovskiy universitet, kafedra radiotekhniki)
 TITLE: Stimulated Raman scattering in the radio-frequency range
 SOURCE: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 6, 1965, 43-48
 TOPIC TAGS: Raman scattering, combination scattering, scattering matrix, radio wave scattering, laser, Raman effect, magnetic field, photon, microwave
 ABSTRACT: An investigation was made of 1) the stimulated microwave Raman scattering at various orientations of a constant magnetic field H_0 in a plane formed by two mutually perpendicular fields H_1 and H_2 , and 2) three-photon absorption when two of the photons have different frequencies. Two methods were used to analyze the two-photon processes: 1) the quasi-classical method, using equations for the density matrix and the nonquantized field, and 2) the probability method. The density matrix method was used to derive a formula for the magnetization vector of a two-level spin system in a strong field oriented perpendicularly to a constant field, and in a weak field oriented parallel to the field. The probability method was used in deriving the formula for the probability of three-photon absorption. The experiments were performed with a free radical of diphenyl-
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ACC NR: AP6002286

pycrylhydrazyl in a constant magnetic field H_0 . In some of the experiments the pumping frequency $\omega_1/2\pi$ was in the range of 10 Gcps and the signal frequency $\omega_2/2\pi$ was varied from 10 to 20 Mcps. Measurements were obtained both in continuous and pulsed operation modes. In other experiments the pump and signal frequencies were 25 Mcps. The experimental and theoretical data showed that calculations of Raman effects in a two-level system were correct. It was shown that when the ratio of the intensity of stimulated Raman scattering to the general resonance absorption is small, the effect cannot be used for amplification of superhigh-frequency signals. In case of amplification during saturation, this effect can be used for amplification in the cm and especially in the mm ranges. Orig. art. has: 8 formulas and 3 figures.

[JA]

SUB CODE: 30, 171 SUBM DATE: 26Jun64/ ORIG REF: 006/ OTH REF: 015/
ATD PRESS: 4/70

Roman Laser 25,44

BC

Card 2/2

L 26131-66 EWT(1)/EWP(e)/EWT(m) IJP(c) GG/WH

ACC NR: AP6015799

SOURCE CODE: UR/0386/66/003/010/0385/0389

AUTHOR: Dneprovskiy, V. S.; Klyshko, D. N.; Penin, A. N.

ORG: Physics Department of the Moscow State University im. M. V. Lomonosov (Fizicheskii fakul'tet Moskovskogo gosudarstvennogo universiteta)

TITLE: Photoconductivity of dielectrics under the influence of laser radiation

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 10, 1966, 385-389

TOPIC TAGS: photoconductivity, laser emission, ruby laser, sodium chloride, aluminum oxide, photon

ABSTRACT: The authors present preliminary results of experiments aimed at observing the photoconductivity induced in uncolored NaCl and Al_2O_3 single crystals by radiation from a ruby laser. The investigated sample was placed in a parallel-plate capacitor charged to a voltage $E_0 \sim 1$ kv. The laser flash induced in the capacitor a charge which was observed on an oscilloscope. To increase the radiation density (by a factor of ~ 5) and to reduce the beam dimensions, a cylindrical telescopic system was used. To avoid effects connected with the space charges, the voltage was applied to the capacitor only just before the flash; the capacitor was short-circuited during the intervals between the flashes. The logarithmic plots of maximum charge (Q) vs. radiation density (S) turned out to be essentially straight lines (corresponding to $Q \sim S^n$) with slopes $n = 4.9 \pm 0.4$ for NaCl and $n = 3 \pm 0.3$ for Al_2O_3 . The

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ACC NR: AP6015799

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charge growth time was ~ 0.2 msec in both cases, this being apparently due to the presence of shallow traps. The authors attribute the observed effect to many-photon excitation of the electrons in the conduction band. The experimental values of S can be reconciled with theoretical estimates of the probability of n -photon absorption if the radiation energy averaged over the beam cross section is $\bar{S} \approx 100 \text{ Mw/cm}^2$ for NaCl and $\bar{S} \approx 20 \text{ Mw/cm}^2$ for Al_2O_3 . It is pointed out in the conclusion that the observation of many-photon absorption in laser media is of interest for the study of the mechanism whereby they become damaged at large generation levels, and for the determination of the limiting laser power. The experiments also yield an estimate of the limiting radiation density S_{max} at which the gain in ruby is offset by three-photon absorption. This is found to be $S_{\text{max}} = 3 \times 10^9 \text{ w/cm}^2$, which is two orders of magnitude smaller than the value of S_{max} calculated by F. V. Bunkin and A. M. Prokhorov (ZhETF v. 48, 1084, 1965). The authors thank S. A. Akhmanov and R. V. Khokhlov for valuable advice and discussion. Orig. art. has: 1 figure and 2 formulas.

SUB CODE: 20/ SUBM DATE: 01Mar66/ ORIG REF: 002/ OTH REF: 005

Card 2/2 *Jx?*

L 11123-66 EVT(1)/EWP(e)/EWT(m)/EWA(h) WH
ACC NR: AP6002710

SOURCE CODE: UR/0056/65/049/006/1723/1727

AUTHOR: Klyshko, D. N.; Penin, A. N.; Tumanov, V. S.

ORG: none

TITLE: Frequency subtraction by means of a three-level system

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 6, 1965, 1723-1727

TOPIC TAGS: nonlinear optics, multiphoton process, three level system, harmonic generation, frequency subtraction, frequency fixer, ruby single crystal, maser

ABSTRACT: Resonance subtraction of two SH frequencies ($\lambda \sim 3 \text{ cm}$) by means of a three-level quantum system was investigated theoretically using graphical methods, and experimentally using ground-state spin levels of a ruby single crystal. The experiment was carried out on a ruby single crystal with a volume of 0.15 cm^3 and a 0.02% concentration of chromium ions. The three lower Zeeman levels were used. To permit all transitions, a constant magnetic field ($H = 625 \text{ oe}$) perpendicular to the crystal axis was used. The cylindrical ruby crystal was placed in a rectangular cavity where it was pumped by the H_{011} and H_{101} modes with frequencies corresponding to 10.22 and 10.15 Gcps, respectively. A coil with $Q \approx 20$ was wound around the specimen and tuned at 70 Mcs to the resonant amplifier. The maximum output power at the resultant (difference) frequency P_3 was of the order of $2 \cdot 10^{-14} \text{ w}$, while the

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ACC NR: AP6002710

power of the heterodyne signal was of the order of 50 Mw. The dependence of P_3 on the angle between the field and the crystal axis was also investigated. The experimental results confirmed the basic theoretical predictions and indicated the possibility of producing resonant mixers based on quantum systems with three discrete energy levels which would convert SHF signals into IF signals. Such signal conversion can be enhanced considerably by suitable selection of the optimal quantum system (solid-state and/or gaseous), cooling the working medium, and incorporating resonant networks with higher Q's. Orig. art. has: 3 formulas and 3 figures. [YK]

SUB CODE: 20/ SUBM DATE: 05Jul65/ ORIG REF: 004/ OTH REF: 003/ ATD PRESS: 4176

Card 2/2

AUTHOR: Penin, A.V.

SOV/136-59-5-4/21

TITLE: Enriching Aluminium Ores (Obogashchat' alyuminiyevyye rudy)

PERIODICAL: Tsvetnyye metally, 1959, Nr 5, pp 22-24 (USSR)

ABSTRACT: The author thinks it is necessary to extract Al from poorer ores in addition to high quality bauxites. He gives the previous work done in this field, on nephilite, alunite, kyanite, and sillimanite. Experiments have been carried out on enriching hydrargillite bauxites (Ref 1), and although positive results were obtained, the small volume of production work made it impossible to recommend a concrete scheme for enriching the ore. If, during the process of enriching, the silica content of bauxite ores can be reduced to 4-5%, then they can be used in the hydro-chemical method of extraction. It is necessary to solve the problem of enriching the ores especially now that new hydrargillite bauxites in Kazakhstan have been found. Experiments on alunite have given promising results - 92% content alunite in the concentrate and 80% of total alunite passed into the concentrate, but no further work is being carried out. Work on enriching nephilite ores has been carried out at the Institute

Card 1/2

Enriching Aluminium Ores

SOV/136-59-5-4/21

Giproaluminiiy. A concentrate from Kirovskiy no. 2 ~~mine~~ gave 28-30% alumina. Concentrates with lower alumina content were obtained from the Uzhur ores. The high clay-containing ores - kyanite and sillimanite - would have to have a preliminary enriching process, but ore from only one source has been investigated. It is necessary to carry out further work to solve the problems of enriching all the poorer aluminium ores. There is 1 reference (Soviet).

Card 2/2

ASSOCIATION: Giproaluminiiy

SOV/137-58-9-18244

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p4 (USSR)

AUTHOR: Penin, A. V.

TITLE: New Sources of Aluminum Raw Materials (Novyye istochniki alyuminiyevogo syr'ya)

PERIODICAL: V sb.: Legkiye metally. Nr 4. Leningrad, 1957, pp 18-26

ABSTRACT: Bibliographic entry
1. Aluminum--Sources

Card 1/1

USSR/Soil Science - Cultivation. Melioration. Erosion.

J-5

Abs Jour : Ref Zhur - Biol., No 9, 1958, 39044

Author : Penin, M.

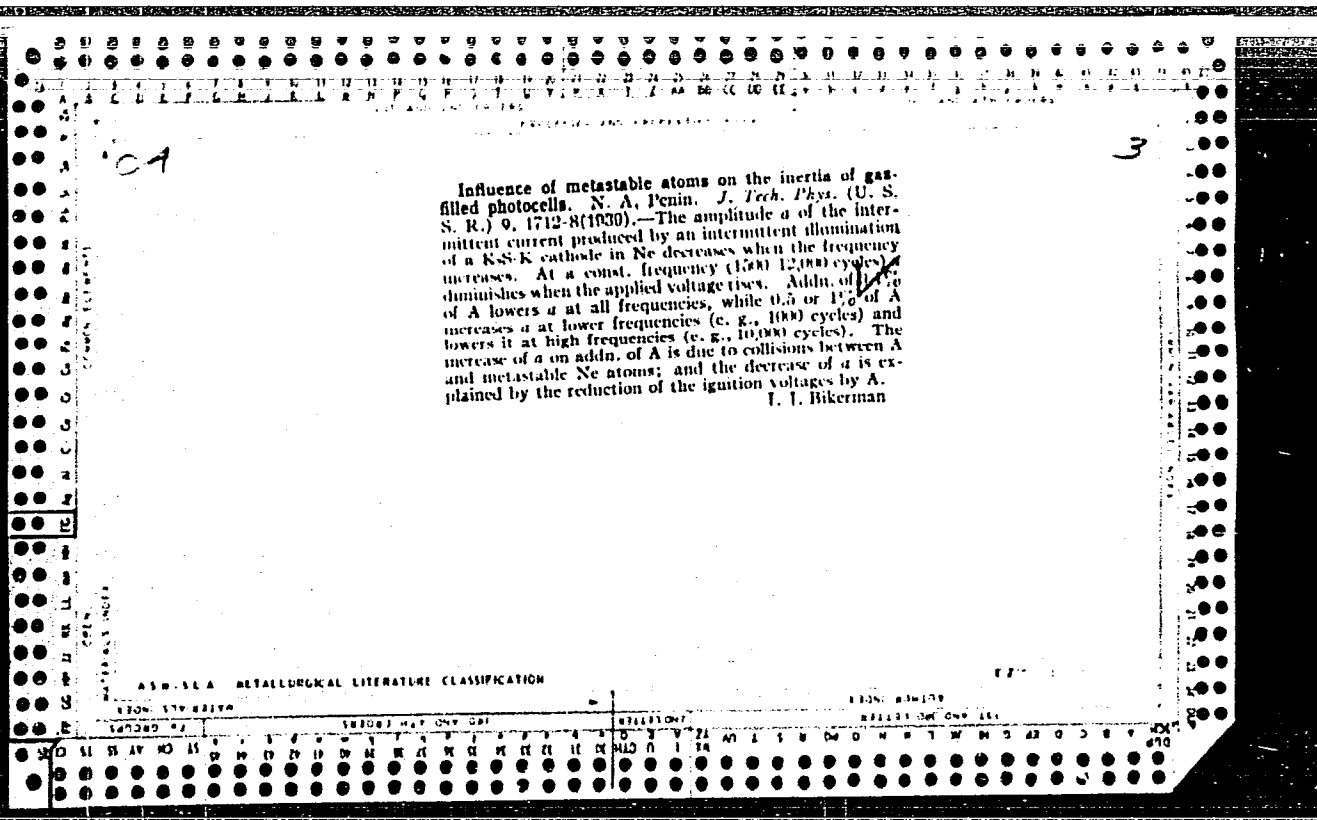
Inst : -

Title : Fall Plowing of Sandy Soils is a Useless Agricultural Method.

Orig Pub : S. kh. Povolzhia, 1957, No 8, 44-45.

Abstract : The annual plowing of sandy soils on the territory of Chkalov district at a depth of 20-30 cm provokes a progressive drying up and scattering of the soil. A pre-sowing shallow plowing at the depth of sealing of seeds is recommended.

Card 1/1



1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
M										2									
										Effect of Additives to Selenium on the Electrical Properties of Selenium Rectifiers. N. A. Penin and K. V. Astakhov (<i>Zhur. Tekhn. Fiziki</i>, 1946, 16, 199-206; <i>C. 765.</i>, 1946, 46, 7014).—[In Russian]. Careful purification through combustion to selenium dioxide, reduction in aqueous solution with sulphur dioxide, and repeated vacuum distillation, yield the purest selenium, free in particular from chlorine, which is always present in the commercial product (0.02%). Extraneous elements, copper, zinc, cadmium, mercury, tin, lead, arsenic, antimony, bismuth, iron, nickel, and silver, in amounts of 0.01 and 0.1 at.-%, were introduced as selenides and fused with the selenium. Rectifiers were prepared by spreading the selenium on hot (240°-260° C.) nickel-plated discs, pressing, and crystallizing at 120°-125° C., heating at 214°-218° C. for 4 hr., and application of the bismuth-cadmium-tin alloy electrode. Blocking voltage U_b and transmitting voltage U_t were measured with a blocking c.d. $I_b = 4$ m.amp./cm.², transmitting c.d. $I_t = 50$ m.amp./cm.², before and after forming with $I_f = 50$-100 m.amp./cm.² for 10 min. The rectifying coeff. $\alpha = I_b/I_t$, at 2 V, in each direction. Alloyed samples show higher U_b and lower U_t than pure selenium, except alloys with arsenic and bismuth, which lower both U_b and U_t. Additions of copper and nickel have the strongest effect, 0.1 at.-% nickel lowering U_b to $\frac{1}{2}$th its value for pure selenium. Values of α are substantially lowered throughout, e.g. with 0.01 at.-% lead from 280 to 160, 0.01 at.-% mercury from 280 to 120, 0.01 at.-% copper from 260 to 2.3. Measurements after 65 days show a strong increase of U_b, indicative of aging; this is particularly marked with antimony, copper, and nickel; with copper and nickel also an "unforming" effect is observed, i.e. a decrease in U_b. All foreign elements cause weakening of the forming effect, indicated by a smaller increase in U_b with respect to the initial (pre-forming) value; nickel has the most pronounced effect in this direction. An addition of 0.01 at.-% nickel has only a slightly weaker effect than one of 0.1 at.-% nickel. As little as 0.01 at.-% copper, nickel, or silver in the selenium is enough to render the alloy entirely unsuitable for use as a rectifier. Forming is completely prevented by 0.1 at.-% nickel. Halogens depress both U_b and U_t, but raise α. Qualitatively, the phenomena are in accord with the theory of Davydov and of Schottky.									

Surface tension of liquid selenium and its temperature coefficient. K. V. Astakhov, N. A. Lyapunov, and E. I. Kodkina. *J. Phys. Chem. (U.S.S.R.)* 20, 403-8 (1946).—For purification, 99.95% Se was repeatedly distd. in a stream of O_2 contg. N oxides, the SeO_2 obtained was reduced with H_2S , and the Se produced washed with H_2O , dried, and twice sublimed in a vacuum. The surface tension γ was detd. in a drop-wt. apparatus adapted for high temp. The σ of Se is 4.06 at 230° , 4.03 at 260° , 4.03 at 280° , and 4.01 at 310° . γ is 105.5, 101.5, 98.0, and 95.2 dynes/cm. at 230° , 260° , 280° , and 310° , respectively. These results were confirmed also by the max. bubble-pressure method. $HgSe$, $CdSe$, FeS , and $NiSe$ alter γ of Se. J. J. B.

KOMAR, V.G.; SAZHIN, L.I.; PENIN, N.A.; TSEDERBAUM, G.I.

Selenium valve. Trudy NIKFI no.7:227-238 '47. (MIRA 11:6)

1. Elektrosilovaya laboratoriya Nauchno-issledovatel'skogo kino-foto-instituta, Moskva.

(Electric current rectifiers)

BLAZHENKOV, V.A.; KOMAR, V.G.; PENIN, N.A.; SAZHIN, L.I.

Production of selenium rectifiers. Trudy NIKFI no.7:239-247 '47.
(MIRA 11:6)

1. Elektrosilovaya laboratoriya Nauchno-issledovatel'skogo kino-foto-
instituta, Moskva.

(Electric current rectifiers)

3

USSR/Chemistry - Selenium
Selenium

Feb 1947

"Density and Its Thermal Coefficient for Liquid
Selenium," K. V. Astakhov, N. A. Penin, E. I.
Dobkina, 3 PP

"Zhur Obshch Khim" Vol XVII, No 2

Experimental determination of the density of liquid
selenium in the temperature range of 218° - 405°.



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METALLURGICAL LITERATURE CLASSIFICATION																									
SUBJECT													AUTHOR												
SUBJECT													AUTHOR												
3C-178. Effect of Impurities on the Electrical Properties of Selenium. N. A. Penin and K. V. Astahov. <i>Engineering & Chemical Digest</i>, v. 1, July, 1949, p. 27-30. Translated from <i>Zhurnal Tekhnicheskoi Fiziki</i> (Journal of Technical Physics), v. 15, no. 2, 1945. Experimental work.																									

PENIN, N.

Physical bases of the action of crystal diodes and triodes.
Radio no.8:18-20 Ag '54. (MIRA 7:8)
(Diodes) (Triodes)

FEWEN, N.
USSR/Electrons -- Crystal diodes & triodes

Card 1/1 Pub. 89 - 17/29

Authors : Penin, N.

Title : Physical principles of the operation of crystal diodes and triodes

Periodical : Radio 9, 41-44, Sep 1954

Abstract : Physical principles of the operation of crystal diodes and triodes are described. Rectifying and amplifying characteristics of these diodes and triodes are analyzed and explained. Two types of transistors ("point-contact" and "surface-contact") are considered. Diagrams.

Institution : ...

Submitted : ...